AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 3325

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Revised

SILICONE RUBBER
Fuel and Oil Resistant
(55 - 65)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Molded or extruded shapes, sheet, strip, or as ordered.

3. APPLICATION: Primarily for rubber-like parts requiring continuous operation in aromatic fuels and di-ester lubricants at temperature from -80 to +300 F (-62.2 to +148.9 C).

4. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.

4.1 General:

4.1.1 Condition: Unless otherwise specified, a suitably cured product shall be furnished.

4.1.2 Weathering: When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.

4.1.3 Corrosion: The product shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.

4.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with the issue of specified ASTM methods listed in the latest issue of AMS 2350, insofar as practicable. When the product supplied is an extrusion of such shape that suitable specimens cannot be cut from the product, a separate flat test strip sample shall be supplied upon request. This strip shall be prepared from 1 in. ± 1/16 OD by 0.075 in. ± 0.008 thick wall tubing which shall be mechanically split and flattened into a strip while being extruded and then cured in the same manner as production material.

4.2.1 As Received:

4.2.1.1	Hardness, Durometer "A" or equiv.	55 - 65	
4.2.1.2	Tensile Strength, psi, min	750	ASTM D412 Die B or C
4.2.1.3	Elongation, %, min	150	ASTM D412 Die B or C
4.2.1.4	Tensile Stress at 50% Elongation, psi	See Note 1	ASTM D412 Die B or C

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4.2.1.5	Tear Resistance, lb per in., min	50	ASTM D624 Die B
4.2.1.6	Specific Gravity	See Note 2	ASTM D297
4.2.2	Di-Ester Oil Resistance: (Immediate Deteriorated Properties)		ASTM D471 Medium: ASTM Service Fluid No. 2
4.2.2.1	Hardness Change, Durometer "A" or equiv., max	-15	Temperature: 300 F ± 5 (148.9 C ± 2.8)
4.2.2.2	Tensile Strength Change, %, max (Based on Area Before Immersion)	-50	Time: 48 hr
4.2.2.3	Elongation Change, %, max	-40	
4.2.2.4	Volume Change %, max	+15	
4.2.3	Fuel Resistance: (Immediate Deteriorated Properties)		ASTM D471 Medium: ASTM Ref. Fuel B Temperature: 70 - 85 F (21.1 - 29.4 C)
4.2.3.1	Hardness Change, Durometer "A" or equiv., max	-15	Time: 48 hr
4.2.3.2	Tensile Strength Change, %, max	-60	
4.2.3.3	Elongation Change, %, max	-50	
4.2.3.4	Volume Change, %, max	+35	
4.2.4	Dry Heat Resistance:		ASTM D573 Temperature: 450 F ± 5 (232.2 C ± 2.8)
4.2.4.1	Hardness Change, Durometer "A" or equiv.	-5 to +10	Time: 24 hr
4.2.4.2	Tensile Strength Change, %, max	-30 to +30	
4.2.4.3	Elongation Change, %, max	-25 to +25	
4.2.4.4	Bend Flat	No Cracking or Checking	
4.2.5	Compression Set:		ASTM D395, Method B Temperature: 300 F ± 5 (148.9 C ± 2.8)
4.2.5.1	Per cent of original deflection, max	40	Time: 70 hr
4.2.5.2	Per cent of original thickness, max	10	

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4.2.6 Low Temperature Resistance: ASTM D746, Procedure B
Temperature: -80 F ± 2 (-62.2 C ± 1.1)

4.2.6.1	Brittleness	Pass	Time: 10 min.

Note 1. Value to be reported. Specimens shall be prestretched to 60% elongation twice within 5 min. of test.

Note 2. Value to be reported. Production material shall be within ± 0.03 of the value agreed upon by purchaser and vendor.

5. QUALITY: The product shall be uniform in quality and condition, clean, smooth, and free from foreign materials and from imperfections detrimental to fabrication, appearance, or performance of parts.

6. TOLERANCES: Unless otherwise specified, the following tolerances apply:

6.1 Sheet and Strip:

Nominal Thickness Inches	Tolerance, Inch Plus and Minus
Up to 1/8, incl	1/64
Over 1/8 to 1/2, incl	1/32
Over 1/2	3/64

6.2 Tubing:

6.2.1

Nominal OD or ID (not both), Inches	Tolerance Plus and Minus	Ovality, % (See Note 3)
Up to 1/2, incl	0.020 in.	10
Over 1/2 to 1, incl	0.030 in.	15
Over 1	4%	15

Note 3. Quality applies to tubing ordered in straight lengths with wall thickness of 1/16 in. and over, and shall be computed from the difference of the minor and major axis diameter measurements, taken at the same location on the tube, expressed as a percentage of the nominal diameter.

6.2.2

Nominal Wall Thickness Inch	Tolerance Plus and Minus
Up to 1/16, excl	0.005 in.
1/16 and over	10%

7. REPORTS:

7.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's compound number, values to be reported, form or part number, and quantity.

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